

**RULES
OF
TENNESSEE DEPARTMENT OF AGRICULTURE, FOOD AND DRUG DIVISION
(HAZARDOUS SUBSTANCES)**

**CHAPTER 0080-4-3
REGULATIONS RELATING TO SODA WATER AND NONALCOHOLIC BEVERAGES; STANDARD
OF IDENTITY; SANITATION PLANT FACILITIES; LABELING**

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0080-4-3-.01 DEFINITION. “Department “ as used in Sections 1 through 13 means the State Department of Agriculture.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original rule certified June 5, 1974.

0080-4-3-.02 STANDARDS OF IDENTITY.

- (1) Soda water is the class of beverages made by absorbing carbon dioxide in potable water. The amount of carbon dioxide used is not less than that which will be absorbed by the beverage at a pressure of one atmosphere and at a temperature of 60° F. It may contain buffering agents as provided in paragraph 5. of subsection (2) of this section. It either contains no alcohol or only such alcohol (not in excess of 0.5 percent by weight of the finished beverage) as is contributed by the flavoring ingredient used. Soda water designated by a name, including any proprietary name provided for in subsection (3). (4) and (5) of this section, which includes the word “cola” or a designation as a “pepper” beverage that, for years, has become well known as being made with kola nut extract and/or other natural caffeine-containing extracts. and thus as a caffeine-containing drink, shall contain caffeine in a quantity not to exceed 0.02 percent by weight.
- (2) Soda water may contain optional ingredients, but if any such ingredient is a food additive or a color additive within the meaning of section 201 (s) or (t) of the Federal Food, Drug and Cosmetic Act, it is used only in conformity with a regulation established pursuant to section 409 or 706 of the act. The optional ingredients that may be used in soda water in such proportions as are reasonably required to accomplish their intended effects are:
 - (a) Nutritive sweeteners consisting of the dry or liquid form of sugar, invert sugar, dextrose, corn syrup, glucose syrup, sorbitol, or any combination of two or more of these.
 - (b) One or more of the following flavoring ingredients may be added, in a carrier consisting of ethyl alcohol, glycerin, or propylene glycol:
 1. Fruit juices (including concentrated fruit juices), natural flavoring derived from fruits, vegetables, bark, buds, roots, leaves and similar plant materials.
 2. Artificial flavoring.
 3. Natural and artificial color additives.

(Rule 0080-4-3-.02, continued)

4. One or more of the acidifying agents acetic acid, adipic acid, citric acid, fumaric acid, lactic acid, malic acid, phosphoric acid, or tartaric acid.
 5. One or more of the buffering agents consisting of the acetate, bicarbonate, carbonate, chloride, citrate, lactate, orthophosphate, or sulfate salts of calcium, magnesium, potassium, or sodium.
 6. One or more of the emulsifying, stabilizing, or viscosity-producing agents brominated vegetable oils, carob bean gum (locust bean gum), glycerol ester of wood rosin, guar gum, gum acacia, gum tragacanth, hydroxylated lecithin, lecithin, methylcellulose, mono-and diglycerides of fat forming fatty acids, pectin, polyglycerol esters of fatty acids, propylene glycol alginate, sodium alginate, sodium carboxymethylcellulose, sodium metaphosphate (sodium hexametaphosphate). When one or more of the optional ingredients mentioned above are used, dioctyl sodium sulfosuccinate may be used in a quantity not in excess of 0.5 percent by weight of such ingredients.
 7. One or more of the foaming agents ammoniated glycyrrhizin, gum ghatti, licorice or glycyrrhiza, yucca (Joshus-tree), Yucca (Mohave).
 8. Caffeine, in an amount not to exceed 0.02 percent by weight of the finished beverage.
 9. Quinine, in an amount not to exceed 83 parts per million by weight of the finished beverage.
 10. One or more of the chemical preservatives ascorbic acid, benzoic acid, BHA, BHT, calcium disodium EDTA, erythorbic acid, glucose-oxidase-catalase enzyme, methylparaben or propylparaben, nordihydroguaiaretic acid, propyl gallate, potassium or sodium benzoate, potassium or sodium bisulfite, potassium or sodium metabisulfite, potassium or sodium sorbate, sorbic acid, sulfur dioxide, or tocopherols; and in the case of canned soda water, stannous chloride in a quantity not to exceed 11 parts per million calculated as tin (Sn), with or without one or more of the other chemical preservatives listed in this subparagraph.
 11. The defoaming agent dimethylpolysiloxane in an amount not to exceed 10 parts per million.
- (3) The name of the beverage for which a definition and standard of identity is established by this section, which is neither flavored or sweetened, is soda water, club soda, or plain soda.
 - (4) The name of each beverage containing flavoring and sweetening ingredients as provided for insubsection (2) of this section is ".....soda" or ".....soda water" or ".....carbonated beverage," the blank being filled in with the word or words that designate the characterizing flavor of the soda water; for example, "grape soda".
 - (5) If the soda water is one generally designated by a particular common name, for example, ginger ale, root beer, or sparkling water, that name may be used in lieu of the name prescribed in subsections (3) and (4) of this section. For the purposes of this section, a proprietary name that is commonly used by the public as the designation of a particular kind of soda water, may likewise be used in lieu of the name prescribed in subsections (3) and (4) of this section.

(Rule 0080-4-3-.02, continued)

- (6) Soda water that contains the optional ingredient caffeine as provided for in paragraph (h) of subsection (2) of this section, artificial flavoring, artificial coloring, or any combination of these shall be labeled to show that fact by the label statement "with" or ".....added," the blank being filled in with the word or words "caffeine," "artificial flavoring," "artificial coloring," or a combination of these words, as appropriate. If the soda water contains one or more of the optional ingredients set forth in paragraph 10. of subsection (2) of this section, which has or is intended to have a preservative effect in the finished beverage, it shall be labeled to show that fact by one of the following statements: ".....added as a preservative" or "preserved with....." the blank being filled in with the common name of the preservative ingredient. If soda water contains quinine salts, the label shall bear a prominent declaration either by used of the word "quinine" in the name of the article or by separate declaration.
- (7) The label statements prescribed in subsection (6) of this section for declaring the optional ingredients present shall appear on a labeling surface of the beverage in such a manner as to render the statement likely to be read by the ordinary individual under customary conditions of purchase or use of such beverage. These statements shall immediately and conspicuously precede or follow the name of the beverage, wherever such name is prominently displayed, without intervening, written, printed, or graphic matter; Provided, that, where such name is part of a trademark or brand, then other written, printed, or graphic matter that is also a part of such trademark or brand may intervene if the label statements required by this section are so placed as to be conspicuously related to the name of the beverage.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.03 SANITATION STANDARDS; FACILITIES.

- (1) **SURROUNDINGS:** The outer premises of every nonalcoholic beverage plant shall be reasonably clean and well drained, free from any material or conditions that creates rodent and/or insect harborage and free from other nuisances and sources of contamination.
- (2) **BUILDING:** The building or portion thereof employed for compounding flavored syrups and packaging carbonated beverages and similar beverages without carbonation shall be used for no other purposes, and shall be constructed of such material and design that it can be kept clean and maintained in a sanitary manner and condition. No domestic animals or birds shall be allowed in any portion of the building. Toilet room or living quarters shall not open directly into any room or area in which syrup or finished beverages are processed.
- (3) **ROOMS:** A separate room shall be provided for compounding and mixing syrups; it shall be separated from other areas of the plant by a solid wall construction. Separate areas from the syrup room shall be provided for bottle washing; filling operation; receiving, storing and shipping; provided, however, that a separate partitioned room for filling beverage containers shall be required in all new construction on and after the effective date of this order. Syrup mixing and container filling operations may be located in the same room if approved by the Department. Variation from this requirement may be permitted where it is demonstrated to the Department of Agriculture that such separation is not necessary due to the design of the plant.
- (4) **FLOORS:** The floors of rooms where ingredients are handled, compounded, mixed and processed or where containers or equipment are washed shall be constructed of concrete or other equally impervious material. They shall be smooth, easily cleaned, properly sloped, coved sealed wall joint, provided with trapped drains and kept in good repair; provided that storage rooms for storing dry ingredients, packaging materials, containers, supplies, need not be provided with drain.

(Rule 0080-4-3-.03, continued)

- (5) **WALLS & CEILING:** Walls and ceiling in the syrup room, filling and washing area, shall have a moisture resistant, smooth, washable, light colored surface and shall be kept clean and in good repair. Walls may be of a darker color up to not more than 60 inches from the floor. With the approval of the Department, walls in the filling and washing area above 60 inches from the floor may be constructed of sound retarding material that is not conducive to multiplication of micro-organisms. When paint is used, it should be of the mold resistant type.
- (6) **DOORS AND WINDOWS:** Effective means shall be provided to prevent access of insects and dust into syrup room or container filling area. Exterior hinged doors as well as door into syrup room shall be solid, tight, outward opening and self-closing. Windows shall be, glazed.
- (7) **LIGHTING:** Lighting in all rooms and work areas shall be sufficient and adequate for the operation that is to be performed. Lights in processing areas where breakage may cause contamination of the product or ingredients shall be of the safety type or equipped with protective shields.
- (8) **VENTILATION:** Natural or artificial ventilation shall be sufficient to prevent excessive condensation formation, mold, or objectionable odors and maintain sanitary conditions in the syrup room, container filling and washing areas or any area where necessary. Artificial ventilating systems are subject to Department approval.
- (9) **WATER SUPPLY:** Water supply shall be readily accessible, of sufficient quantity and temperature for the procedure or process intended and of a safe, sanitary quality. There shall be no cross-connections between the safe water supply and any unsafe or questionable water supply, nor with sewage disposal system. There shall be evidence that the water supply has been approved by state or local authorities within past six months.
- (10) **TOILET FACILITIES:** Toilet facilities shall be provided. The toilet room shall be kept clean, well lighted and ventilated and plumbing shall meet the State code. Toilet room doors shall be solid, tight and self-closing. Hot and cold running water, soap, single service towels or air dryer for hands shall be provided. A sign directing employees to wash their hands before returning to the plant shall be posted in all toilet rooms. Toilet soil lines shall be kept separate from industrial waste lines within plant.
- (11) **WASTE DISPOSAL:** Liquid waste from plant shall be conveyed to proper facilities in compliance with State plumbing code. Other waste shall be handled and removed at intervals of such frequency as to preclude infestations of insects or rodents and the development of odors and other nuisances. Only clean waste receptacles may be brought into food handling room. Sewage disposal must comply with local and state public health ordinances and codes.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.04 CONSTRUCTION AND REPAIR OR EQUIPMENT

- (1) All equipment, containers and utensils used in the handling, processing, compounding, mixing, storage or transporting of beverages or beverage ingredients shall be smooth, impervious corrosion resistant, nontoxic, and in good repair and shall be constructed to permit adequate sanitation. Effective protection from contamination shall be maintained. Product-contact surfaces shall be self-draining. Equipment shall be free of sharp internal corners. Welded or soldered areas shall be smooth and similar to the parent metal. All joints shall be flush. Piping shall be of sanitary design and installation. All temperature-control equipment and control devices used on bottle washers shall be

(Rule 0080-4-3-.04, continued)

accurate and adequately maintained. The bottle washer shall be equipped with an indicating thermometer to record the temperature of the caustic wash solution. It shall be placed so as to be conveniently visible to the operator at all times.

- (2) If the washing, filling, and crowning devices are not integral parts of one machine, but are performed by separate units of equipment, they shall be arranged to exclude manual contact with the necks or tops of the bottles between filling and crowning.
- (3) Mixing and storage tanks, pipelines, filters, and other apparatus employed in the preparation and distribution of syrups shall be of sanitary construction and made of stainless steel or similar materials resistant to the action of syrup ingredients. All apparatus employed in syrup-making shall be free from recesses and so constructed that all parts may be easily sanitized. All permanent in place syrup lines shall be sloped to drain. All syrup tanks shall be self-draining and provided with suitable covers. Mixing shall be by mechanical means performed so as to prevent contamination of the syrup.
- (4) Carbonated water shall not be conveyed in pipelines of galvanized iron, lead, zinc, copper or other deleterious materials.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.05 PROCESSING METHODS

- (1) **GENERAL SANITATION:** The operations of receiving, segregating, holding, compounding, mixing, packaging and packing, storing, transporting, and handling shall be conducted in a sanitary manner. There shall be no contamination, adulteration, or deterioration of the product or its ingredients. Every plant manufacturing bottled beverages in reusable bottles or containers shall be equipped with suitable mechanical bottle washing apparatus, and with approved machines for carbonating, filling and crowning. Plant operations shall be performed in such a manner as to prevent the operator or his clothing from coming in contact with the beverages or sanitized product-contact surfaces.
- (2) **BOTTLE WASHING:** Reusable glass containers used in the manufacture of soft drinks shall, before being refilled, be sanitized by being washed in an automatic washing machine. An indicating thermometer and caustic solution test equipment shall be used to ascertain the temperature and caustic strength of the washing solution. The washing solution shall consist of at least 3 percent caustic soda with a minimum contact period of 5 minutes and a temperature of 130° F. or an equivalent cleansing and sanitizing process. The bottles shall be rinsed free of washing solution with potable water. Single-service containers may be sanitized by air or water rinsing machines. One trip (single service) containers such as bottles and cans, may be washed in a mechanical bottle washer, air or water rinsed. One trip containers that are not washed, air or water rinsed must be received in the plant covered with a tight fitting plastic shroud and shall be stored in such manner as to protect such containers from airborne and manual contamination.
- (3) **PREPARATION OF SYRUPS:** Syrups shall be prepared in a sanitary manner. Every precaution shall be taken against contamination, absorption, or deleterious substances during the preparation and subsequent storage. Syrup tanks and vats shall be covered and constructed of stainless steel or other suitable noncorrosive material. The tanks shall be free from defects, self-draining, free from seams, and shall be of such construction as to be readily flushed, cleaned, and sanitized. Galvanized iron, lead, zinc, copper or brass-lined containers, pipelines, or apparatus of other deleterious materials shall not be used in preparation, storage or conveyance of acidified syrups or syrups of any nature

(Rule 0080-4-3-.05, continued)

which will react with the metal or chemical composition of the container. The syrup room shall be equipped with a wash sink and plumbed with a drain and hot and cold running water.

- (4) **FILLING AND CROWNING:** Bottles shall be filled and capped by means of automatic machinery, and neither the operator nor his clothes shall come in contact with any part of the bottle or machinery that might result in contamination of the product. Removal of the crown of imperfectly crowned bottles and recrowning shall not be permitted. Crowns which have been touched on the inner side by the operator, as may occur while adjusting the crowner, shall be discarded. Returnable bottles shall be inspected for any abnormal condition immediately before or after being filled.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.06 CLEANING AND BACTERICIDAL TREATMENT. Multiple-service containers, equipment and utensils used in the handling, processing, storing, or transporting of beverages or beverage ingredients shall be thoroughly cleaned after use. They shall be subjected effectively to an approved bactericidal process prior to each usage. The methods used shall be such that soft drinks and their ingredients shall not be contaminated or adulterated. Chemicals used for cleaning and bactericidal treatments shall have labels which identify the contents and stored in an approved manner. All pipelines, apparatus, and containers used in the manufacturing processes shall be thoroughly sanitized at adequate intervals, but never less frequently than once weekly. Apparatus and containers shall be washed and rinsed before sanitization. Fillers shall be cleaned and sanitized at the end of each day's operation and flushed with potable water before beginning operations. Since accepted industry practice permits syrup to remain in the syrup tanks and lines between periods of processing operations, the syrup tanks and lines will be cleaned and sanitized when emptied, as scheduled by the plant. After scheduled cleaning and sanitation, the syrup tanks and lines shall be flushed with potable water before beginning processing operations. Hot water, chlorine, or equally effective bactericidal agents are permissible for sanitization.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.07 SANITARY CONTROLS. To assure adequate sanitary control every plant manufacturing bottled carbonated beverages shall be adequately provided with apparatus for ascertaining the sanitizing strength of the soaker solution used in bottle washing. An indicating thermometer shall be used at the bottle-washing machine. If pipelines and other equipment are sanitized by hot water, additional thermometers shall be available at convenient locations. Caustic solution test equipment or some other suitable index for determining the causticity of the soaker solution shall be available at all times.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.08 CONTROL OF INSECTS AND ANIMALS. The soft drink plant shall be free of rodents, rodent harborage, insects, and insect-breeding places. Effective measures shall be used to control and eliminate insects, vermin, rodents and domesticated animals. Insecticides and rodenticides shall be properly identified, used and stored in a safe and acceptable manner. Restricted pesticides, as 1080, must be placed and removed only by a licensed exterminator.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.09 STORAGE FACILITIES. These facilities shall be clean, in good repair, and shall be provided with ample space for the storage of food substances, container closures, gaskets, cleaned utensils, and equipment, so as to prevent contamination and deterioration. Conveyers and cases shall be maintained in a clean condition. It is recommended that an 18 inch space between the stored products and the wall be provided.

(Rule 0080-4-3-.09, continued)

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.10 VEHICLES AND TRANSPORTATION. Vehicles used to transport all products and materials shall be maintained in a clean condition to aid in protecting the product from contamination.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.11 PERSONAL HYGIENE. All personnel in processing rooms and areas shall have a current health certificate, wear clean outer clothing, and head coverings; be free of communicable disease, and infected cuts, open sores or other lesions on hands, arms or head; and wash hands before starting or returning to work. All personnel in processing room or areas of the plant shall practice good sanitation and shall not smoke, chew tobacco, expectorate, or eat in processing areas.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.

0080-4-3-.12 LABELING.

- (1) All carbonated beverages, still drinks and mineral waters sold or offered for sale shall be plainly marked or labeled, capped, branded or tagged with:
 - (a) The name of the beverage as set forth in Section 2 of these regulations.
 - (b) The words “artificially colored,” “artificially flavored” or “artificially colored and flavored” or with words equivalent thereto and acceptable to the department, if the product is artificially colored or artificially flavored, or both.
 - (c) An accurate statement of the net contents of each bottle, can or other container in terms of fluid measure.
 - (d) The common name of each ingredient used in its manufacture. Flavorings and coloring may be designated as such without specifically naming them. The requirements of this paragraph do not apply to a carbonated beverage the ingredients of which have been fully and correctly disclosed to the department on a form which the department shall furnish on request.
 - (e) The name and principal place of business of the bottler or distributor responsible for placing the beverage on the market. This paragraph does not apply to carbonated beverages or still drinks, the container or crown of which is permanently and distinctly branded with the trade-mark or brand of the distributor or bottler thereof, if the trade-mark or brand is registered with the Secretary of State or the United States Government and a declaration is filed with the department, affirming the name, trade-mark or brand under which the beverage is to be sold and giving a full description of the area of the state in which such beverage is to be distributed and the name and address of the person responsible in such area for compliance with the Tennessee Food, Drug and Cosmetic Act as amended.

Authority: T.C.A. §§52-109 and 52-121. **Administrative History:** Original Rule certified June 5, 1974.